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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/547,415	04/11/2000	Faquir C. Jain	CONN-2	4421

7590 03/14/2003  
Hung Chang Lin  
8 Schindler Court  
Silver Spring, MD 20903

EXAMINER

GARRETT, DAWN L

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicati n N .

09/547,415

Applicant(s)

JAIN ET AL.

Examiner

Dawn Garrett

Art Unit

1774

**– The MAILING DATE of this c mmunication appears on the cover sheet with the correspondence address –**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 December 2002 .
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 5-8, 10-16, 18, 20, 22, 25-27, 29, 38-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8, 10-16, 18, 20, 22, 25-27, 29 and 38-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 December 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action is in response to applicant's amendment received December 16, 2002, paper no. 14. The specification was amended. A drawing correction was submitted. Claims 1, 3, 5-8, 10, 12, and 44 were amended. The examiner has also now considered the additional species of claims 2, 11, 13-16, 18, 25-27, 29, and 38-43. Claims 1-3, 5-8, 10-16, 18, 20, 22, 25-27, 29, and 38-44 are pending.
2. In the Office action mailed January 30, 2002, paper no. 9, the examiner objected to the listing of references in the specification as not being a proper form of information disclosure statement. In response, applicant deleted the listing of references. The examiner notes that the disclosure still lists reference numbers. It is suggested that applicant delete the Ref. numbers and in place of the reference numbers put the actual reference citation.
3. The corrected drawing page submitted December 16, 2002 is approved by the examiner.
4. The objection to the disclosure set forth in paper no. 9, paragraph 4, is withdrawn due to applicant's amendment.
5. The objections to the claims set forth in paper no. 9, paragraphs 5-10, are withdrawn due to applicant's amendment.
6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-3, 5-8, 10-16, 18, 20, 25-27, 29, and 38-44 are rejected under 35 USC 112, first paragraph (originally set forth in paper no. 9, paragraph 12) as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is still not seen where the specification specifically describes a "p-doped wide energy gap semiconductor". The citation of support in the disclosure provided by applicant in paper no. 14 is page 4, line 4 and page 6, second line from the bottom. These passages of text from the disclosure discuss "p-type", but do not clearly discuss "p-doped". Clarification and/or correction are required.
8. The rejection of claims 1, 3, 5-8, 10 and 12 under 35 USC 112, first paragraph, for the unclear support of "thin wide energy gap semiconductor layer" in the disclosure, set forth in paper no. 9, paragraph 12, is withdrawn due to applicant's explanation in paper no. 14.
9. The rejection of claims 1, 3, 5-8, 10 and 12 under 35 USC 112, first paragraph, set forth in paper no. 9, paragraphs 13 and 14, is withdrawn due to applicant's explanation in paper no. 14.
10. The rejections of claims 1, 3, 5-8, 10, and 12 under 35 USC 112, second paragraph, set forth in paper no. 9, paragraphs 17-24 and 26-33 are withdrawn due to the amendments.
11. Claims 1-3, 5-8, 10-16, 18, 20, 25-27, 29, and 38-44 are rejected under 35 USC 112, second paragraph, for the reasons set forth in paper no. 9, paragraph 25. Claim 1 still recites "desired pixels" (although it appears that applicant intended to delete

"desired" from the "clean copy" of the amendment, since the word is in brackets). The word "desired" is an indefinite term and the specification does not clearly define "desired". Correction is required.

12. The rejection of claims 1, 3, 5-8, 10, 12, and 44 under 35 USC 103(a) as being unpatentable over Fischer et al. (US 6,147,365) set forth in paper no. 9, paragraph 35, is withdrawn.

### ***Claim Objections***

13. Amended claim 1 submitted by applicant as the "clean copy" to be entered includes several underlined words and a bracketed word. It is suggested that the underlining be removed and the bracketed word "desired" be deleted in order to have a completely clean version of the amended claim.

14. Claims 42 and 43 are objected to because they are not in a proper form. Claims 42 and 43 should not depend from claim 1, since these devices are entirely different from claim 1 and even have a different preamble. It is suggested that each of claims 42 and 43 be written as an independent claim. The preamble of claim 42 would be, for example, "A *n-p-n* junction electroluminescent (EL) device comprising:".... The preamble of claim 43 would be, for example, "A *p-n-p* configuration electroluminescent (EL) device comprising:".... For claim 43, the components of the device should be set forth in the claim rather than referring to components in claim 42, which recites an entirely different type of device. Correction is required.

15. Claim 11 is objected because it recites "first p-doped Si" and this term is no longer present in amended claim 1. It is suggested that the word "first" be deleted from claim 11.

16. Claims 38 and 42 are objected to because they recite "comprising of" which should be "comprised of". Correction is required.

### ***Rejections***

17. Claims 1-3, 5-8, 10-16, 18, 20, 25-27, 29, and 38-44 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. It is not seen where the added terminology "lattice-matched" in amended claim 1 is described or defined in applicant's disclosure.

18. Claims 1-3, 5-8, 10-16, 18, 20, 25-27, 29, and 38-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, it is not understood how the "thin layer of Si relative to the substrate" is positioned relative to the substrate. The word "relative" is considered to be vague and indefinite and does not give clarity to the position of the Si layer compared to the position of the substrate.

19. In claim 1, line 7, the claim sets forth "the cladded nanocrystals (CNCs)", but the CNC layer is not set forth until later in the claim. Clarification is requested with regard to whether or not this is the same CNC layer recited later in the claim and if so, there is

improper antecedent basis for the CNC layer in line 7. Clarification and/or correction are required.

20. Claims 39 and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 39 and 40 recite "said elastomeric spacer", but none of the preceding claims set forth an "elastomeric spacer". There is improper antecedent basis for "elastomeric spacer" in claims 39 and 40.

21. Claim 41 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 41, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

22. The term "low" in claim 38 ("low vapor pressure viscosity-modifying agents") is considered to be a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

#### ***Allowable Subject Matter***

23. Claims 1-3, 5-8, 10-16, 18, 20, 22, 25-27, 29, and 38-44 contain allowable subject matter over the prior art; however, it is noted these claims are currently rejected under 35 U.S.C. 112, first and second paragraphs, and there are several objections to the claims. With regard to the patentable subject matter, the prior art fails to teach an

electroluminescent devices comprising a layer of pseudomorphic cladded quantum dots nanocrystals (CNCs) in specific combination with the other layers of the devices as presently claimed.

### ***Response to Arguments***

24. Applicant's arguments with respect to Fischer (US 6,147,365) have been considered but are moot in view the withdrawal of the rejection over Fischer. The rejections under 35 USC 112, first and second paragraphs, that were maintained from the last Office action were discussed previously in this Office action.

### ***Conclusion***

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (703) 305-0788. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached at (703) 308-0449. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

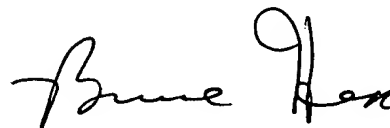
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.

  
D.G.

March 5, 2003



BRUCE H. HESS  
PRIMARY EXAMINER